

# Cleaner energy from waste plastic





# Plastic-to-fuel market overview



## Market overview

- **Over 300m tons of plastic** produced annually
- Market size of plastic-to-fuel (2023) ~ **US\$531m**
- Projected to grow at **23.6% CAGR** to US\$2.3bn by 2030
- **Pyrolysis** is the dominant technology (80%+ of market share as a comparative)
- **Asia Pacific, North America, Europe** are largest plastic-to-fuel markets
- **Africa** remains untapped for now!



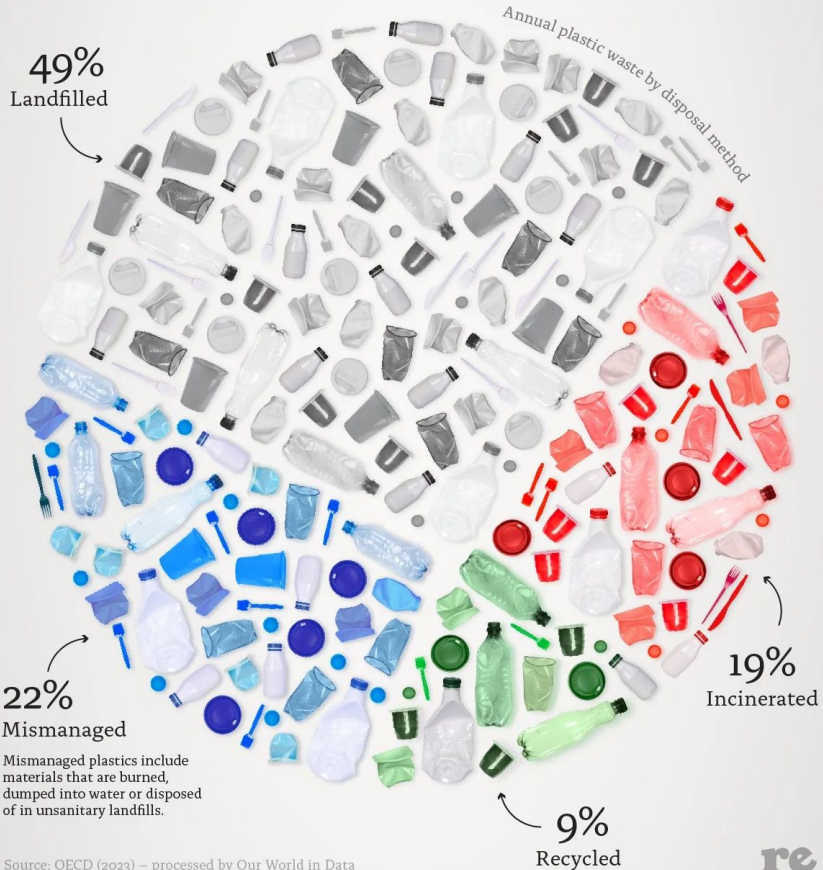
## Key growth drivers

- Rising **demand for renewable/cleaner fuels** across various industries
- **Increasing regulations** to curb plastic pollution
- Need for more **sustainable and permanent methods of plastic waste disposal**
- **Increasing volume of plastic waste** globally due to urbanization and industrialization.



# SORTING THE WORLD'S PLASTIC

How much plastic waste actually gets recycled globally?



## Reduce & re-use?

Kicks the can down the road without really solving the problem.

## Recycling, just isn't enough

1. Most plastic is not recyclable at all.
2. No plastic is infinitely recyclable.
3. Even if it were all infinitely recyclable, most never reaches a recycling facility.

Because **plastic is light, bulky and everywhere. It costs more to transport than it's worth to recycle!**

**Kepera Power  
creates  
cleaner fuel  
from waste  
plastic.**



# What makes Kepera Power's Beetle unique?

Our **technology** converts plastic waste into **carbon-neutral, cleaner fuels** using **Advanced Reverse Polymerisation**.

## Key Differentiating Features:

- Efficient, **low-emission** process.
- **Modular design** configurable for scalability and efficiency.
- Ability to **process mixed and low-quality plastic** waste.
- **Proprietary technology design and configuration** with a **high yield** of synthetic hydrocarbon intermediate **SHI** fuel from plastic waste efficiently.
- **Compact dimensions** - significantly smaller physical footprint.
- **Lower operational costs** Integrating the **full circular value chain** – from raw material to fuel offtake.





**1 kilogram of waste plastic**

**1 liter of fuel**



We can convert **more than 50%** of all the plastic being made today in our small, containerized system into **synthetic intermediate industrial fuel** which can be used without further refinement or blended with traditional fuel and **sold for a profit**.

## The plastics we can process include:



**#5 Polypropylene**  
(PP)



**#2 + #4 Polyethylene**  
(LDPE and HDPE)

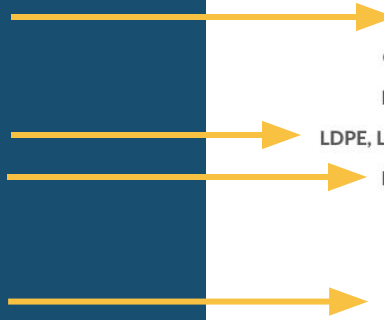


**#6 Polystyrene**  
(PS)



# We have a solution for unrecyclable plastic waste!

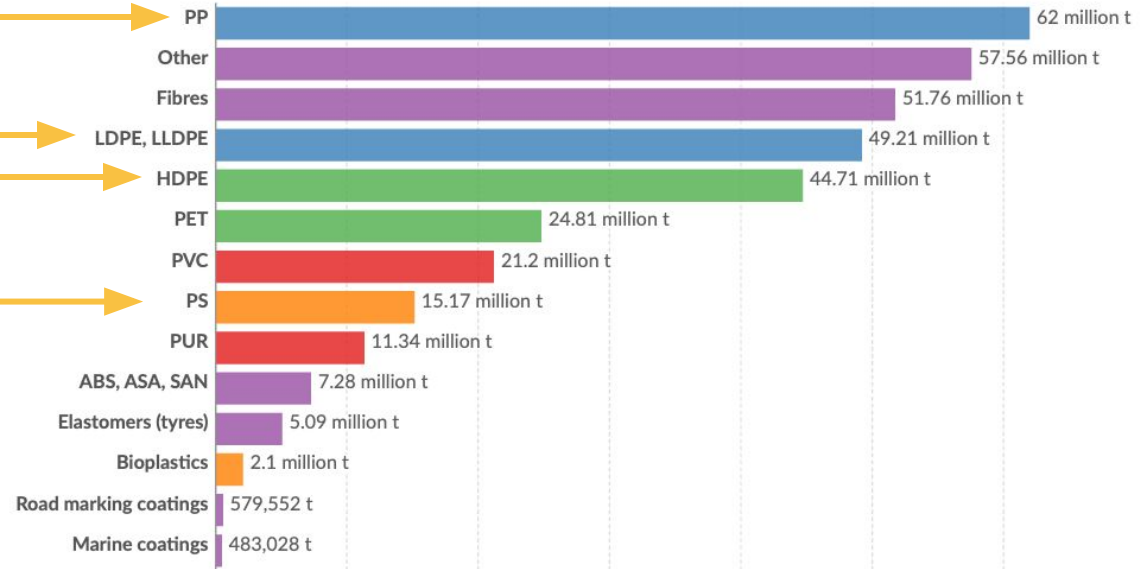
**Our Beetles can process over 50% of all waste plastic in the world.**



## Global primary plastic waste generation by polymer, 2019

Our World in Data

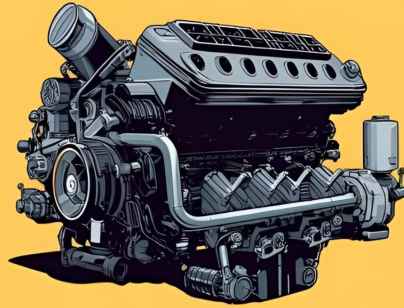
Polymers are color-coded to indicate recyclability: green for widely recycled, blue for moderately recycled, orange for limited recyclability, red for usually non-recycled, and violet for unknown recyclability.



Data source: OECD (2022)

OurWorldInData.org/plastic-pollution | CC BY

Note: Polymer types are as follows: Acrylonitrile Butadiene (AB), Acrylonitrile Styrene Acrylate (ASA), Styrene Acrylonitrile (SAN), Polyurethane (PUR), Polyvinyl Chloride (PVC), Polystyrene (PS), Linear Low-Density Polyethylene (LLDPE), Polypropylene (PP), Polyethylene Terephthalate (PET), High-Density Polyethylene (HDPE).



# Kepera Power = Cleaner Power

Plastic is already very highly refined and therefore has a much lower emissions profile when you burn it as a fuel.

When **Kepera Power synthetic fuel** made from unrecyclable plastic bags is used in a diesel engine, **its sulfur emissions are less than .7 ppm** - low sulfur diesel is sold as **50 ppm** - **FIFTY times more than our synthetic fuel made from plastic.**

Our machines can track how much plastic has been destroyed and how much fuel is created, **resulting in a carbon-reduction mechanism that can disrupt fossil fuel economies with cleaner fuel.**

# Kepera Power = Cleaner Power



**Each liter of fuel** made from plastic by Kepera Power and used where the plastic is a problem **offsets around two liters of fuel** used by the fossil fuel industry to explore, drill, refine, transport and sell that liter of fuel to a consumer.

In some of the 50,000 islands where people use diesel fuel to generate power, **that ratio can be as high as 4 liters of fuel to supply a single liter!**



## Our working pilots in the field

In Bangladesh our technology has been successfully turning plastic pollution into fuel for the last 19 months, providing energy to local farmers. We have worked in partnership with the Faridpur Municipal solid waste site, local NGOs, Practical Action and other stakeholders.

Our technology has also been tested and refined in Africa, France and Australia for the last two years.

**We are now ready to go to market!**



# Opportunities and Projects Underway

1. **Northlands - Landfill diversion, Show Site and Sales Office**
2. **Karongwe - Sustainable Game Fuel Project, Community Impact**
3. **Bangladesh - River Cleanup**
4. **Expansion - SADC, Francophone Africa and Europe**
5. **Manufacturing Expansion**
  - Netherlands
  - Australia
  - South Africa
7. **Secured Letters of Intent**
  - Eco-Entity - Plastic Supply
  - Northlands Energy - Fuel offtake
  - Karongwe - Kruger Canyons Biosphere Project
  - Siyakholwe - Eastern Cape
  - GWI - Francophone expansion



# Kepera Powers New Possibilities

The Kepera Beetle machine also produces an **CNG-type gas**, made up mostly of **methane and hydrogen**, which can be used to run a **gas-powered generator with very low emissions**.

That gas can also be **contained and sold**, or used on site to **dry plastic in a marine environment**, or to **fuel an attached kitchen for workers or community members** -the possibilities are endless!

The heat from the machine can also be **harnessed to desalinate sea-water**, or **run a hot water boiler for showers**, or to **offset electrical power** used to melt the plastic that is injected into the machine.





# Kepera Powers sustainable businesses and employment

Our plants, made up of two of our Beetle machines provides a “**business in a box.**” Creating roughly **six well-paying jobs** where they are deployed, the plant also comes with a full training regime and cross-platform learning.

There is also an opportunity to create **preprocessing businesses** with at least another **six hands-on permanent jobs** in **plastic collection, cleaning and shredding** that can be done by **community members in developing countries, or mechanically -if that technology is available.**

The whole system can be **maintained by someone with a diesel mechanic background**, and the parts suite (aside from our secret sauce) is largely made up of **tested components from the global automotive industry** and can be **easily sourced and replaced.**



# Our Offering

## Remove Plastic from the Environment

**We provide:** A turnkey plant that requires only 650sq/m of space & ~30 tons of plastic waste per month.

**We earn:** License Fee from each plant operation and perpetual royalties on gross revenue.



## Plant-in-a-box

### Safely produces:

SynFuel:

Synthetic Hydrocarbon Intermediate

SynGas: Methane & Hydrogen

### Delivery across multiple key success areas:

1. Regulatory Compliance

### Unit of Value



2. Plastic Supply & Prep



3. Plastic Processing



4. SynFuel Storage

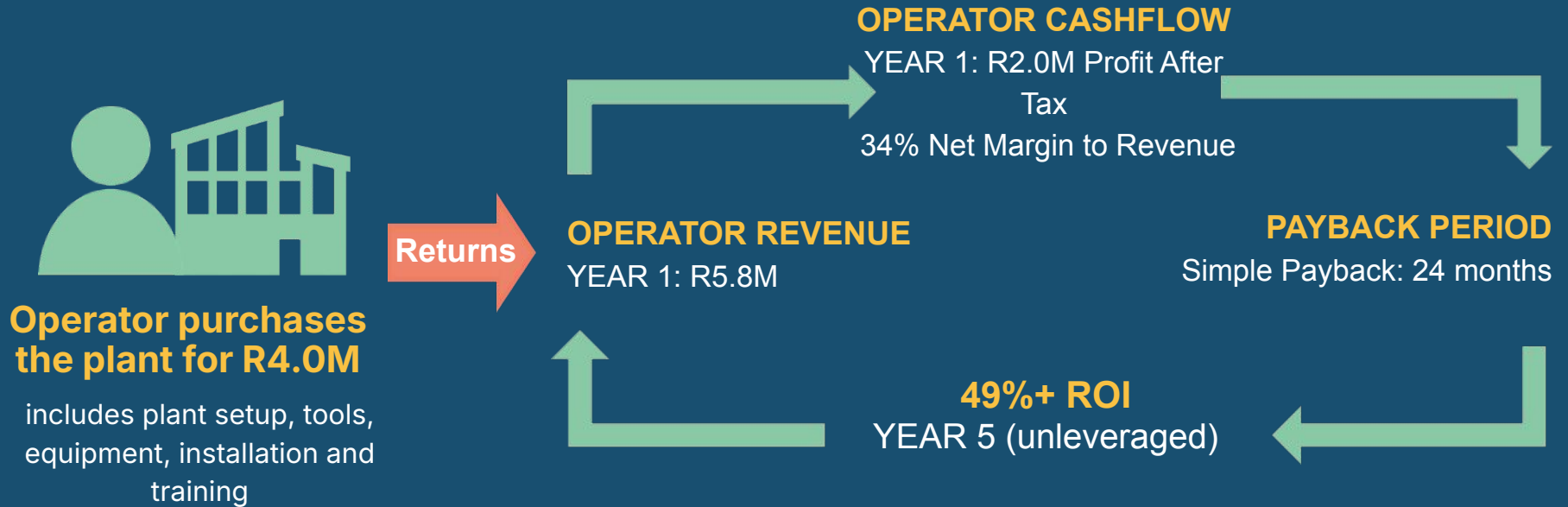


5. Offtake & Distribution





# The Flow of Operator Financial Value



**Kepera Power receives upfront licensing fee and X% of operator revenue**

NOTE: Additional future revenue opportunities– syngas, carbon credit, plastic credits

# Our Goal in 5 Years - Triple Bottom Line Impact



**515m litres of carbon-neutral fuel** produced and 288m litres annually thereafter



**82.4m kgs of carbon-neutral gas** produced and 46.0m kgs annually thereafter



Minimum **40,000 jobs and micro-enterprises** created across the value chain



**2.9m tons of carbon saved** and 1.6m tons saved annually thereafter



**515m kg of plastic diverted** and 288m kg annually thereafter



**US\$ 50m+** annual license and royalty revenue from licensed operators



**60%+** Return on Equity

# The Team



**JEFFREY BARBEE**  
**CEO & Founder**

Jeffrey Barbee is an environmental leader who has been the CEO of a clean tech company for more than five years. He is also an award winning investigative journalist for magazines like National Geographic and the director and founder of Alliance Earth, a non-profit foundation focused on environmental education.



**CRAIG TERBLANCHE**  
**Chief Operating Officer**

Digital transformation and decentralized ecosystems. Economic inclusion and autonomy. Large-scale IT and platform-based solutions. Specialist expertise in creating commercially sustainable, scalable, decentralized systems.



**FAYYAD BISCOMBE**  
**Chief Financial Officer**

Over 20 years of experience in financial, analytics, and risk management industries. Passionate about sustainability and technology-driven solutions.



**KERRY NASH**  
**Chief Communications Officer**

Communication and creative strategy development expert with more than twenty years of experience. Her years of work with clients like the United Nations Environment Programme and the World Bank has helped those organizations drive social, environmental and scientific education and communication globally.



# Contact Kepera Power



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## Kepera Powers Solutions

**Mobility, efficiency, ease of deployment**

Our small but mighty Kepera Beetles are delivered in a **short shipping container** directly to **plastic pollution hotspots** or recycling centers, tackling the problem at its source by **providing cheaper, cleaner power directly from the plant.**

**No high plastic shipping costs to far-off recycling centers.**

The **high cost of fuel** used at waste facilities can be **offset with the fuel from the plant or sold for a profit.**



## The operating model

We have developed a **global business roll-out plan** that sees two of our Kepera Power Beetles being placed into a **single plastic processing plant** that will process up to one ton of plastic every day.

This solution works directly with **both communities facing plastic pollution** as well as with **current recycling businesses** to offset both their power costs and destroy plastic that they are unable to recycle.



# Kepera Powers The Internet of Things (IOT)

Our Kepera Beetles are connected to the internet, enabling performance and safety monitoring for tracking how much plastic is being destroyed and how much fuel we are displacing from the global fossil fuel industry.

This information is one of our chief assets, allowing companies and individuals to mitigate their plastic use, placing the power of plastic destruction onto people's phones and into people's pockets. This is a massive opportunity to empower people to take responsibility for their own plastic use and pay for its destruction.

This data enables us to utilize capital from the global carbon market in order to drive down the cost of our technology and rapidly roll-out our machines.